

- i. Caudal short and eye small. Florida to Texas, except southernmost Florida Keys. *catulus*₂
- ii. Caudal longer and eye larger.
 - j. Head, postorbital, antedorsal, and maxillary long; pectoral count comparatively low; branching of modified rays sparse. Panama.....*longiceps*₂
 - jj. Characters differing with the local population, but not occurring in preceding combination. Southernmost Florida keys to Brazil and the West Indies, excepting Panama.....*soporator*₂
 - hh. Modified pectoral rays usually 6. Bermuda.....*sextaneus*₂
 - gg. Posterior dorsal rays of large male not markedly prolonged, not reaching end of hypural. Eastern Pacific.....*lineatus*₁
 - k. Depth of caudal peduncle 11.5-14.5; maximum length 94 mm. Galápagos Archipelago. *lineatus*₂
 - kk. Depth of caudal peduncle 14.5-15.5; maximum length 123 mm. Lobos de Afuera Island, Peru.....*lupinus*₂
 - ff. Second and third modified pectoral rays usually forking more than once; ventral 15-22. Eastern Pacific.....*ramosus*₁
 - l. Pectoral rays modally 20.
 - m. Eye not small; scales 36-42.
 - n. Head usually 29-30. Coasts of Mexico, Colombia, and Ecuador.....*curticeps*₂
 - nn. Head usually 31-32. Panama.....*ramosus*₂
 - mm. Eye small; scales 40-43. Paita, Peru.....*micromma*₂
 - ll. Pectoral rays modally 19. Socorro Island.....*longipinnis*₂
 - dd. Pectoral rays usually 21-22, varying 20-23. Eastern Pacific.....*andrei*₁
 - o. Scales on opercle in a rather large or medium sized patch; pectoral 22-29. Costa Rica to Ecuador, including Panama, inshore.....*andrei*₂
 - oo. Scales on opercle in a small patch or absent; pectoral 20-23. Panama, offshore.....*heteropoma*₂

⁴ I present this key here, in conjunction with the present short résumé, with some measure of reluctance, rather in deference to the opinion of many taxonomists who seem to regard a key as indispensable. In general, a key is, of course, a useful tool in taxonomic practice, when based on carefully tested data instead of being merely compiled from the literature. Even so, there are many exceptions, where the brief and categorical statements used in a key, without numerous qualifying phrases, and without reference to the full data in the text on which conclusions are

based, may be somewhat misleading, and *Bathygobius* is such an exception. In such cases the key best finds its place in a publication presenting the full details of the study, reinforced by tables, instead of in a short, condensed, skeletonized, preliminary paper, such as this one. While this key gives a bird's-eye general view of the characters that separate, and the relationship between, the species and subspecies, the student should not assume that it constitutes an easy shortcut to enable him always to "run down" specimens correctly.

ZOOLOGY.—Notes on some Mexican urocoptid mollusks, with the description of new species.¹ PAUL BARTSCH, U. S. National Museum.

The U. S. National Museum recently received several sendings of mollusks from Mexico from that indefatigable collector, Miss Marie E. Bourgeois. Among other things these include fine lots of members belonging to the family Urocoptidae. Some of them have required considerable research to untangle the confused nomenclature, while others prove to belong to undescribed species. It is hoped that this little paper will prove helpful and stimulate our Mexican friends to further efforts in this field.

Genus *Anisospira* Strebel
Anisospira? *martensii* (Strebel)

1865. *Cylindrella* (*Urocoptis*) *truncata* von Martens, Malakoz. Blätt. 12: 13-14, in part.

¹ Received March 5, 1947.

1880. *Eucalodium martensii* Strebel, Beitr. Kenntn. Fauna Mex. Land- und Süßwasser Conch. 4: 73-74, in part; pl. 13, fig. 13; pl. 11, figs. 8, 14; pl. 12, fig. 3.

1897. *Eucalodium truncatum* von Martens, Biologia Centrali-Americana: 264, in part.

Shell decollated, turritid, solid, dusky olivaceous, somewhat paler at the suture; whorls remaining 7, scarcely convex, increasing regularly arcuately striate, with 3 or 4 slightly elevated, irregular spiral lines. Last whorl not solute, rounded, with an obsolete basal carina. Aperture subdiagonal, subcircular, posterior angle rounded, separated a little from the penultimate whorl. Columellar fold obsolete. Peristome somewhat thickened and slightly expanded. Length, 29.5 mm; diameter, 10 mm; aperture length, 7 mm; diameter, 6 mm.

The above is a translation of von Martens's Latin description of a specimen in the Berlin Museum collected by H. Uhde in Mexico. No specific locality was known for it.

Strebel (*loc. cit.*) redescribes this specimen as follows: The shell is solid and possesses the characters of *Eucalodium* as well as their form, coloration, and gloss. Its color is yellowish brown shading to paler and almost straw yellow in the suture. The sculpture consists of very inconspicuous, fine ribs, which are quite regularly but not closely spaced. In addition, one finds in places on the lower half of the whorls near the suture a short, irregular folding, which passes obliquely forward, and 2 to 4 fine, in places interrupted, weak, tumid, spiral lines, which are of the same strength and elevation as the axial ribs. It is difficult to say whether these features are individual or specific variations, but probably they are specific. The $7\frac{1}{2}$ remaining whorls are well rounded, appressed at the summit, and slightly tumid at the suture, so that this appears slightly channeled. The last whorl in the beginning is weakly keeled below, then provided with a weak tumid area, which extends to the aperture. The specimen appears to be not quite adult, for the last portion seems to be on the point of becoming solute and the white peristome is only slightly expanded and not completely separated, although united by a columellar callus. The inside of the aperture is white with a faint violet tinge. The columella is simple, apparently hollow as in *Eucalodium* and twisted in each whorl about the axis. The columellar fold is slight and evenly placed. Height, 29.2 mm; diameter at tip, 6.4 mm; greatest diameter 9.8 mm; below 9.2 mm. Aperture height 7.7 mm; diameter, 6.5 mm.

This description is followed by a description of the dried soft parts, which von Martens found in the shell, which he figures on plate 11, figure 8 (radula), figure 14 (jaw), plate 12, figure 3 (reproductive system).

From Strebel's description I am led to believe that this shell belongs to the genus *Anisospira*.

Attempting to discover its possible home by tracing Uhde's peregrinations in Mexico, one finds the following information in Dr. Eduard von Martens's paper, "Ueber die mexikanischen Binnen Conchylien aus den Sammlungen von Deppe und Uhde in Berliner Museum."² Von

Martens states that Uhde was a member of the Prussian Embassy staff in Mexico. Von Martens, under each species, lists the shells collected by Uhde. Many of these bear only "Mexico" as locality designation. A great number, however, give more specific locality data, showing that Uhde collected in the states of Veracruz, Puebla, Mexico, Oaxaca, and Michoacán. Since Oaxaca is the center of *Anisospira* distribution, it seems indicated that we should look for the home of this species in that state. Oaxaca is the home of *Anisospira dalli* von Martens, *liebmanni* Pfeiffer, *strebeli* Pfeiffer, *verdensis* Dall, and *orcutti* Dall. According to von Martens, Uhde collected "*Glandina turris* Pfeiffer" in Oaxaca near the west coast, at an elevation of 10,000 feet; also "*Helix bicincta* Pfeiffer" in the southern interior of Oaxaca and "*Bulimulus (Liostracus) mexicanus gracilior* Pfeiffer" in Oaxaca.

Genus *Oligostylus* Dall

Oligostylus mariae, n. sp. Fig. 1

1892. *Eucalodium martensi* (Strebel) Pilsbry, *Man. Conch.* 15: 18-19, in part.

1897. *Eucalodium truncatum* (Pfeiffer) von Martens, *Biologia Centrali-Americana*: 256, 264, ?pl. 16, figs. 3-9.

Shell cylindroconic, chestnut-brown, with the peristome white with a brownish flush, interior of the aperture brownish. The early whorls are decollated. Even the young specimens bear the sculpture of the adult and have practically the same rotundity of the whorls. The adult shell has the whorls moderately rounded and separated by a well-impressed suture. They are crossed by numerous retractorily slanting axial riblets, which are separated by spaces about as wide or a trifle wider than the riblets. Of these riblets, 96 are present on the last whorl, where they become more crowded immediately behind the peristome; 87 of them are present on the penultimate whorl. Periphery of the last whorl well rounded, with the merest indication of an angulation. Base short, well rounded, with a narrow umbilical chink and marked by the continuation of the axial ribs, which extend slightly enfeebled to the umbilical chink. The last whorl is slightly solute. Aperture broadly ovate, almost sub-circular, and slightly oblique. Peristome slightly expanded, slightly reflected, and somewhat thickened. The columella shows an oblique fold deep within the aperture. The columella is

² Malakoz. Blätt. 12: 1-78. 1865.

slender with the merest indication of a twist and without fold.

The type, U.S.N.M. no. 543582, was collected by Miss Bourgeois at Omiltemi, Guerrero. It has 7 whorls remaining and measures: Length, 26.3 mm; greatest diameter, 8.9 mm. U.S.N.M. no. 543583 and U.S.N.M. no. 543584 contain 21 young and adult topotypes from the same source. Five additional specimens have been returned to Miss Bourgeois. These bear the collector's numbers 990 and 991.

The species is probably most nearly related to *Eucalodium neglectum* Crosse and Fischer, described from Oaxaca, Mexico. This, however, is much larger with quite different sculpture.

Von Martens states, on page 264 under the much confused concept of *Eucalodium truncatum*, that he has received several specimens from H. H. Smith collected at "Omilteme," Guerrero, which enables him to give a new description and figure of it. Apparently there must have been an error in his citation, for his explanation of figures on plate 16, figures 3 to 9, are all credited to Anganguero (Michoacán). They were probably based on the Omiltemi specimens.

Oligostylus? hegewischi, n. name

1841. *Bulimus truncatus* Pfeiffer, Symb. Hist. Helic.: 43-44, not *Bulimus truncatus* Bruguière, Encycl. Method.: 319, 1792.
 1843. *Bulimus truncatus* Pfeiffer, Philippi Abbild. Beschr. Conch.: 55, pl. 1, figs. 8a, b, c.
 1848. *Bulimus truncatus* Pfeiffer, Monogr. Helic. Viv. 2: 154.
 1849. *Bulimus truncatus* Reeve, Conch. Icon.: pl. 70, fig. 498.
 1865. *Cylindrella (Urocoptis) truncata* von Martens, Malakoz. Blätt. 12: 13-14, in part.
 1873. *Eucalodium truncatum* Fischer and Crosse, Miss. Scient. Mex., Mollusca, 1: 392-394, in part.
 1886. *Eucalodium martensii* Strebel, Beitr. Kenntn. Fauna Mex. Land- und Süßwasser Conch. 4: 73-74, in part.
 1897. *Eucalodium truncatum* von Martens, Biologia Centrali-Americana: 265, in part.
 1902. *Eucalodium martensii* Pilsbry, Man. Conch. 15: 18-19, in part.

Shell subcylindric, apex decollated, solid, epidermis greenish horn-colored, obliquely striate; suture impressed, pale; whorls 8, convex, the last angulated at base; aperture suborbicular, soiled white within; peristome almost simple, almost covering the slight um-

bilicus rimation with its expanded columellar edge. Length, 14 lines [30.5 mm]; diameter, 4 $\frac{1}{3}$ lines [9.4 mm].

Near Anganguero, Michoacán, Mexico, collected by Hegewisch under leaves of American agaves.

The above is a translation of Pfeiffer's Latin description to which he adds, in Philippi, page 55, that he had in addition to the adult specimen, some young individuals one of which is also figured in c. He states here that the whole shell is quite regularly obliquely striated, brownish, tending toward olive-green, with every turn much paler toward the suture.

Pfeiffer states in a footnote in von Martens's paper (Malakoz. Blätt. 12: 14) that he had to return to Hegewisch the adult specimen and that it is unknown what has become of this. All of which means that the proper systematic position of *Bulimus truncatus* Pfeiffer, which I am here rechristening *Oligostylus hegewischi*, will have to await the securing of specimens from the type locality.

It is to be hoped that Miss Bourgeois will rediscover it at Anganguero.

Genus *Coelocentrum* Crosse and Fischer
Coelocentrum huertai, n. sp.

Fig. 5

Shell cylindroconic, chestnut-brown (sometimes white), with the aperture brown or in the albinos white. The nuclear whorls are decollated in all our specimens. Young shells minus the extreme nuclear tip show that the shell increases quite regularly in size, but the outlines thereof are slightly concave until the last decollated stage is reached. From there they increase slightly in size to the middle of the spire and then again slightly decrease toward the last whorl. The whorls are slightly rounded and separated by a well-impressed suture. They are crossed by numerous very fine, hairlike, closely spaced, retractively curved axial riblets, which are about as wide as the spaces that separate them. Of these riblets, 193 are present on the penultimate whorl of the type. Periphery of the last whorl marked by a weak cord. Base short, slightly rimate, well rounded, and marked by the continuation of the axial riblets. The last whorl is solute for about one-twentieth of a turn. Aperture irregularly broadly oval. Peristome moderately expanded and reflected. Columella in the last whorl broad, hollow, and

marked by weak, retractively curved hair lines. On the last whorl it becomes a little more slender and has a slight twist.

The type, U.S.N.M. no. 543585, was collected by Miss Bourgeois at Omiltemi, Guerrero, in the Sierra Madre Mountains. It has 8.3 whorls remaining and measures: Length, 24.5 mm; greatest diameter, 7.7 mm. U.S.N.M. no. 543586, collector's no. 992, U.S.N.M. no. 543587, collector's no. 993, and U.S.N.M. no. 543588, collector's no. 983, contain 13 topotypes from the same source. Four more specimens are in Miss Bourgeois's collection.

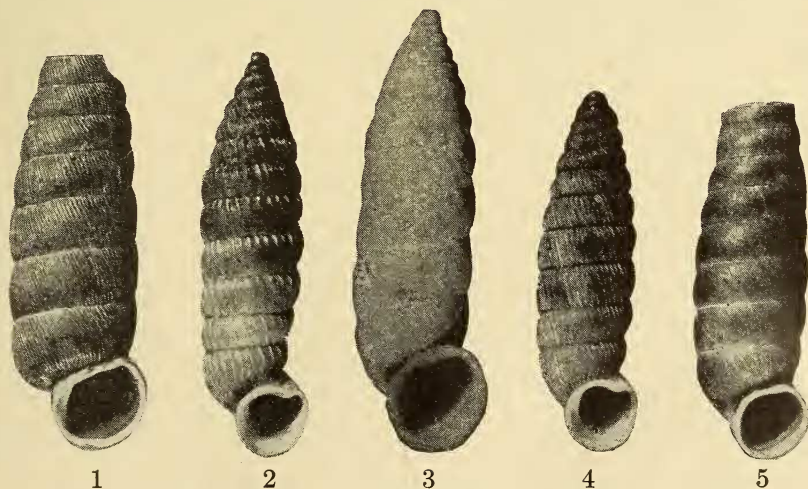
This species in size appears to resemble most closely *Coelocentrum dispar* Pilsbry, from Guatemala, from which, however, its much finer sculpture will distinguish it.

Genus *Holospira* von Martens
Holospira rehderi, n. sp.

Fig. 2

Shell small, cyliandroconic, thin, semi-transparent, grayish white, with the peristome and interior of the aperture white. The nucleus consists of a little more than 2.5 whorls, which are well rounded and minutely granulose. The postnuclear whorls increase regularly in size, reaching their maximum diameter on the tenth whorl, beyond which they again decrease gradually in size. They are well rounded on the early turns but become flattened on the later whorls. The early postnuclear whorls have decidedly retractively slanting riblets, which are most numerous on the first turn where they are

about one-third as wide as the spaces that separate them. Anterior to the middle of the spire the ribs are strengthened at the summit, becoming almost nodulose here. They weaken on the middle of the turns and again become strengthened near the suture, thus giving one the impression of slight obsolescence on the middle of the whorls and granulation at the summit. Twenty-four ribs are present on the tenth whorl. Behind the aperture of the last turn the ribs become closely crowded, while on the middle of the turns they are separated by spaces about three or four times as wide as the ribs. Suture strongly constricted. Periphery of the last whorl well rounded. Base somewhat attenuated, well rounded, with a deep umbilical chink. Last whorl solute for about one-tenth of a turn. Aperture broadly pear-shaped. Peristome expanded and reflected. The columella is slender with a very slight twist. The columella bears a strong median fold in the penultimate whorl, which is about one-fourth as wide as the turn. In the antepenultimate whorl this fold becomes a little slenderer and a little wider. In this turn the parietal wall has pendent from its middle a broad lamella, which is concave above and which approximates the medial basal lamella, which is concave on its anterior side, the two leaving a mere slit between them into which the columellar fold points. The fold on the outer lip is slender and threadlike and also points toward the slit between the major lamellae. Posterior to the penultimate turn the lamellation disappears.



FIGS. 1-5.—New species of Mexican urocoptids: 1, *Oligostylus mariae*; 2, *Holospira rehderi*; 3, *Haplocion wilmoti*; 4, *Holospira morelosensis*; 5, *Coelocentrum huertai*.

The type, U.S.N.M. no. 543589, was collected by Miss Bourgeois at Chietla, Puebla, under stones. It has 14 whorls and measures: Length, 14 mm; greatest diameter, 3.9 mm. U.S.N.M. no. 543590 contains 24 topotypes from the same source. Ten additional specimens are in Miss Bourgeois's collection.

This species recalls *Holospira albertoi* Bartsch from Petlalcingo, Puebla, in the distant spacing of the axial ribs, but differs completely from that in general shape, which here is more pupoid, and also in the weakening of the ribs on the middle of the turns.

***Holospira morelosensis*, n. sp.**

Fig. 4

Shell small, elongate-pupoid, thin, yellowish horn-colored, with the peristome and aperture white. Nuclear whorls about 2, strongly rounded and minutely granulose. The post-nuclear whorls increase gradually in size up to the eighth whorl and again become slightly narrower toward the last turn. They are well rounded on the early turns and almost flattened on the broad portion of the spire, curving, however, even here toward the summit. Suture strongly constricted. The whorls are marked by strong, sublamellose axial ribs, which are a little weaker on the expanding spire than on the broader portion of the shell where they are about half as wide as the spaces that separate them. These ribs become slightly thickened at the summit which renders them almost crenulated. They are retractively slanting except on the last turn where they are vertical. Of these ribs, 51 are present on the penultimate turn. Periphery well rounded. Base slightly produced, well rounded, deeply rimate, and marked by the continuation of the axial ribs. The last whorl is solute for about one-tenth of a turn, and the solute portion is rendered carinate at the posterior angle. Aperture subcircular. Peristome expanded and reflected with a slight nodular thickening on the parietal wall near the posterior angle. The columella is twisted on the last turn and slightly twisted in the early whorls. In the penultimate whorl a median fold, rounded at the free edge and extending over almost half the width of the turn, is present. A broad parietal fold, concave on the outside, extends almost halfway across the turns, while

on the basal area a fold half as wide projects toward the edge of the parietal fold. The labial fold is submedian and consists of a mere thread. All these folds are confined to the penultimate turn.

The type, U.S.N.M. no. 543591, was collected by Miss Bourgeois at Tlaquiltenango, Morelos. It has 12.5 whorls and measures: Length, 12.1 mm; greatest diameter, 3.5 mm. U.S.N.M. no. 543592 contains 10 topotypes from the same source, collector's no. 941. Five additional specimens are in Miss Bourgeois's collection.

This species does not closely resemble any of the known forms, and therefore it would be futile to attempt to compare it with them.

Genus **Haplocion** Pilsbry

***Haplocion wilmoti*, n. sp.** Fig. 3

Shell moderately large, cylindroconic, white. Nuclear whorls 2.3, well rounded, microscopically granulose. The postnuclear whorls increase gradually in size until the sixth post-nuclear turn. From there on the shell becomes cylindric, being slightly constricted on the base of the last whorl. All the whorls except the last one are marked by retractively curved lines of growth, which almost in places simulate obsolete riblets. On the last turn the base and the anterior half of the turn are marked by axial ribs, which extend into the umbilicus. Suture moderately constricted. Base well rounded, with an umbilical chink. Last whorl slightly solute. Aperture almost subcircular, broadly expanded and reflected. The columella is hollow and rather narrow, with an extremely weak fold in the penultimate turn.

The type, U.S.N.M. no. 543595, was collected by George Wilmot under large rocks in the mountain near the City of Chihuahua. It has 12.5 whorls and measures: Length, 30 mm; greatest diameter, 10 mm. U.S.N.M. no. 543596 contains a topotype from the same source, and still another is in the collection of Miss Bourgeois.

This species most nearly resembles *Haplocion semisculpta* Stearns, which also comes from Chihuahua. It differs from it in being much larger and in having the axial ribs limited to the last turn. In *semisculpta* they extend posteriorly for three or more turns.